DOCUMENT RESUME

ED 158 782 IR 006 424

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TITLE Development of a Course Outline on the Application of Learning Theory in Reading, Listening and Viewing Educational Media Materials.
INSTITUTION Trenton State Coll., N.J.
PUB DATE Oct 77
NOTE 26p.; Some pages may not reproduce well due to marginal legibility of original

EDRS PRICE MF-$0.83 Plus Postage. HC Not Available from EDRS.
DESCRIPTORS Bibliographies; Colleges; *Course Descriptions; *Curriculum Guides; Instructional Design; Instructional Materials; *Instructional Media; *Learning Theories; Library Education; *Media Specialists

ABSTRACT

The project described resulted in the development of a college course designed to acquaint students with some basic learning theories and principles and their application as they apply to reading, listening, and viewing educational media materials. Objectives, course outline, methods, bibliography, basic requirements, and evaluation procedures are outlined. This course partially fulfills the requirements for certification as an Educaticnal Media Specialist in New Jersey. (WBC)

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DEVELOPMENT OF A COURSE OUTLINE ON THE APPLICATION OF LEARNING THEORY IN READING, LISTENING AND VIEWING EDUCATION MEDIA MATERIALS

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October 1977

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ABSTRACT

DEVELOPMENT OF A COURSE OUTLINE ON THE APPLICATION OF LEARNING THEORY IN READING, LISTENING, AND VIEWING EDUCATIONAL MEDIA MATERIALS.

Research compiled during this study made a strong point as to no one medium is best for all purposes or no one learning theory. Media uses should be consistent with its objectives. Therefore, this study formulated a course in learning theory as it applies to reading, listening, and viewing educational media materials by studying books and materials both in media and learning theory. Inquiries were made at other institutions offering similar programs as well as an examination of psychology courses in learning theory. The study recommended changes in Media/Library Science curriculum in institutions offering graduate study that gives State Certification for Librarianship or Specialization in Educational Media. This course should provide the student with learning experiences in the basic theories of learning, accepted principles of learning, and its relationship with reading, listening, and viewing educational media materials.

TABLE OF CONTENTS

	PAGE
INTRODUCTION	1
THE PROBLEM	2
REVIEW OF LITERATURE	3
PROCEDURES	5
RESULTS	8
DISCUSSION, IMPLICATION, AND RECOMMENDATION	17
APPENDIX I	18
BIBLIOGRAPHY	21

I. INTRODUCTION

Learning, with its many elements and variables of what is to be learned and how it is to be learned, what is to be taught and how it is to be taught, constitutes a complex discipline--the core of the educative process. Teaching media and production skills represents but a small segment, and teaching the use of media and its potential falls within that segment.

Determining the objectives, content, and methodology of media instruction in contemporary education is not the simple matter that it may appear to be, and our traditional approaches, shaped by long service and practice may be affording media specialists a plausible form of security. The current emphases in the schools on self-directed learning, inquiry, and independent study all too often contribute to an automatic solidifying of these established methods, with little or no critical evaluation of their current appropriateness.

For the specifics of content (types of knowledge and skills) to be acquired by individual students and the decisions regarding the appropriate time, place, and methods for acquiring them can best and only be determined by the pooled judgments of experts in the academic subject fields, in curriculum construction, in instructional methods and in the psychology of learning.

be specifically designed for the department needs under the area of educational communication. The course will be entitled, MCS 653, Application of Learning Theory in Reading, Listening, and Viewing Educational Media Materials.

B. REVIEW OF THE LITERATURE

An examination of the literature showed among other findings, that the number of communication courses for practicing teachers is growing; twice as many communication courses are taught through education departments as through speech departments. Lynn (9) and Rogers (10) made recommendations in their studies for the ongoing development, or establishment, of such courses and programs.

Research by Ausburn (1) revealed that in order to investigate learning theories when it comes to media, media researchers need to explore three variables. One, psychological requirements of a given learning task; two, individual differences in cognitive style; and three, specific media characteristics. It is necessary to identify the psychological processes which underlie any specific learning tasks in order to study it systematically. Since specific attributes are possessed by a given form of media, this three dimensional approach gives strong clues to the reasons why certain instructional methods work well with some learners while others have better or

no effect on others. Spangenberg (11) offers a similar approach to achieving specific learning principles with learners.

Therefore, it is necessary that a course entitled "Application of Learning Theory in Reading, Listening, and Viewing Educational Media Materials" to include Ausburn's three variables, including media learning activities as stated by Hattman (5) and Vitro (13). These learning activities with reading, listening, and viewing have been substantiated with research based on theories that vital skills are more effectively taught when they are unified in reinforcing activities. In the viewing area, Gropper (4), the Visual Concepts Program (12), and Henz (6) shows through their research that conceptual learning is significantly greater and quicker when pictorial presentation precede verbal or printed ones.

When listening to educational media materials numerous teaching strategies and materials may be utilized both in individual instruction and communication. Borgers (2), Keyes (7), and Kranyik (8) offer suggestions through their findings on ways to improve communication strategies.

To sum up the research, Day and Beach (3) reviewed fifty years of research literature, comparing visual and auditory presentations and concluded that combined sensory presentation led to greater comprehension than either auditory or visual presentation by themselves.

II. PROCEDURES

The review of literature provided many views of working with educational media or of working with learning theories, but not a combination. When the two areas did overlap, the studies concerned themselves with only one of the focal points--reading, listening, or viewing, not all three. Material and information were pulled from each area of research.

In order to make an objective study, textbooks both in media and learning theory were explored. The collection of the Trenton State College Library were examined for books dealing with learning theory. Those books which had valuable supplemental material were collected to be included in the course bibliography. However, there were no specific references to reading, listening, or viewing. Instructional materials were handled in general with minimum application to learning theory.

The library collection of the Department of Media Communication Science provided a vast resource of textbooks and reference books in the media discipline. These books were very specific in the areas of reading, listening, and viewing educational media materials and offered many suggestions and activities for its teaching. However, again, this information did not provide an application of this material to learning theory.

Therefore it was necessary to gather pertinent informa-

tion from both learning theory books and materials as well as books and materials dealing with media. From this collection an outline was developed and compiled (see page 9) following the procedures set forth by the Academic Affairs Committee of Trenton State College as to course discription, specific objectives, outline of the course, teaching methods, bibliography, basic requirements and procedures for the evaluation of the course.

Inquiries were made at the two other institutions in New Jersey which offer graduate degrees in Educational Media or Library Science. They were questioned to see whether they offer a course which meet the new State certification laws regarding the application of learning theory in educational media. Both Rutgers State University and Glassboro State College responded.

Rutgers reply stated that they met the certification requirements in a course entitled "Media Design." The course description stated the students will learn how to write specifications for instructional materials that incorporate princeples of learning. However, at close examination of the objectives and procedures, there is no mention of psychology of learning, principles or theories as applied to educational media materials. It does not meet state certification laws.

Glassboro State College claims they are meeting certification requirements through two courses entitled "Book Selec-

tion for Media Centers" and "Selection and Evaluation of Non-Print Materials." However, there is no mention of learning theory application in the course description, objectives, or content of the course.

The Psyschology Department at Trenton State College was questioned to determine if courses in basic learning theory was offered, as to provide a starting point for this study. The department offers one course on the undergraduate level entitled "Learning 310" and no graduate courses. The courses covers the application of major principles and concepts in the theories of learning to teaching/learning situations, both specific and general but only in the Cognitive and Affective Domain. Therefore this material was not used at all in this study because it did not apply to those areas necessary to meet the requirements of a new course.

III. RESULTS

By following the directives in the Procedures section of the study and by gathering data from these sources, a formal course on the Application of Learning Theory in Reading, Listening, and Viewing Educational Media Materials was developed.

The form of the course outline follows the procedures set forth by the Academic Affairs Committee of Trenton State College as to course description, specific objectives, outline of the course, teaching methods, bibliography, basic requirements, and procedures for the evaluation of the course. It is designed to first acquaint the student with some of the basic learning theories and principles and then the application of these learning theories to the area of reading, listening, and viewing educational media materials.

Although theories have been included, the approach is essentially practical in nature, especially in the areas of reading, listening, and viewing. Also since Trenton State is moving towards the area of competency based education and learning, the process fully outlines the specific objectives or goals of the course. By using this approach, it will allow the instructor to offer the possibility of developing a theory of teaching/learning for students to use in their future roles as educators as well as to encourage the development of more learning aids appropriate to the needs of the learning situation.

The course goes as follows:

DEPARTMENT OF MEDIA COMMUNICATION SCIENCE
TRENTON STATE COLLEGE

COURSE OUTLINE

MCS 653 Application of Learning Theory in Reading, Listening, and Viewing Educational Media Materials

3 credits

I. Course Description

Provides the student with learning experiences in the basic theories of learning, accepted principles of learning and its relationship with reading, listening, and viewing educational media materials.

II. Specific Objectives

At the completion of the course the students will have mastered specific competencies in the following areas:

A. Two Major Families of Contemporary Learning Theory
   1. to identify origins of S-R Associationism
   2. to identify origins of Gestalt-Field Psychology
   3. to define philosophies behind the two families
   4. to discuss motivation as related to each family

B. Description of the Learning Process in the Two Families
   1. to distinguish between animal and human learning
   2. to distinguish between the two major contemporary versions of the nature of learning
   3. to understand the relationship of behavior to learning

C. Skinner's Operant Conditioning
   1. to discuss operant conditioning
   2. to understand the process of operant reinforcement and extinction
   3. to apply operant conditioning to classroom or library practices

D. Cognitive Field Theory
   1. to understand essential features of cognitive field theory
   2. to discuss implications of cognitive field theory
   3. to develop insight while teaching
   4. to relate intelligence to learning
   5. to apply cognitive field psychology to teaching situations

E. Transfer of Learning
   1. to recognize the process of transfer
   2. to relate transfer to each learning theory

F. Reading Educational Media Materials
   1. to apply S-R Associationism theories to the reading of educational media materials
   2. to apply Gestalt theories to the reading of educational media materials
   3. to apply Operant Conditioning to the reading of educational media materials
   4. to apply Cognitive-Field theories to the reading of educational media materials
   5. to analyze possible uses of media materials
   6. to write annotations to describe materials
   7. to survey new literature in the field
   8. to convey ideas, skills, or attitudes through reading educational media materials
   9. to select educational media materials according to appropriateness, level of sophistication, cost, available and technical quality
   10. to explain textbooks as contributions to teaching and learning
   11. to improve performance in using and evaluating textbooks, reference books, microforms, and programmed instruction

G. Listening to Educational Media Materials
   1. to apply S-R Associationism theories to the listening of educational media materials
   2. to apply Gestalt-Field theories to the listening of educational media materials
   3. to apply Operant Conditioning to the listening of educational media materials
   4. to apply Cognitive-Field theories to the listening of educational media materials
   5. to identify, select, and evaluate various educational media materials in the listening area
   6. to apply methods of instruction to listening materials
   7. to identify the learning objectives to be realized in the listening field
   8. to emphasize the importance of educational radio broadcasting
   9. to identify reference materials in the listening area
   10. to plan learning experiences to reinforce the practices of accepted learning theories
   11. to communicate the role and potential of listening to educational media materials to achieve curriculum goals
   12. to describe and design various learning situations in which recordings can be used

H. Viewing Educational Media Materials
   1. to apply S-R Associationism theories to the viewing of educational media materials
   2. to apply Gestalt-Field theories to the viewing of educational media materials
   3. to apply Operant Conditioning to the viewing of educational media materials
   4. to apply Cognitive-Field theories to the viewing of educational media materials
   5. to identify, select, and evaluate various educational media materials in the viewing area
   6. to utilize a variety of ways to present graphic materials affectively to attain learning objectives
   7. to utilize still pictures to improve visual literacy
   8. to improve types of learning that involve motion pictures
   9. to indicate methods by which television can be incorporated as a part of classroom or library instruction
   10. to plan the possible uses of an appropriate television program
   11. to provide experiences that will acquaint users with various visual media materials and their role in education

III. Outline of the Course

A. Contemporary Learning Theory
   1. identifying origins of S-R Associationism
   2. identifying origins of Gestalt-Field Psychology
   3. defining philosophies behind the two families
   4. discussion of motivation between families

B. The Learning Process in the Two Families
   1. distinguishing between animal and human learning
   2. distinguishing between the two major contemporary versions of the nature of learning
   3. understanding relationship of behavior to learning

C. Operant Conditioning
   1. discussion of operant conditioning
   2. understanding operant reinforcement and extinction
   3. applying operant conditioning to classroom or library practices

D. Cognitive Field Theory
   1. essential features of cognitive-field theory
   2. implications of cognitive-field theory
   3. developing insightful teaching
   4. relating intelligence to learning
   5. applying cognitive-field psychology to teaching situations

E. Transfer of Learning
   1. process of transfer
   2. relating transfer to each learning theory

F. Reading Educational Media Materials
   1. application of S-R Associationism theories to the reading of educational media materials
   2. application of Gestalt theories to the reading of educational media materials
   3. application of Operant Conditioning to the reading of educational media materials
   4. application of Cognitive-Field theories to the reading of educational media materials
   5. analyzing uses of media materials
   6. writing annotations to describe materials
   7. surveying new literature in the field
   8. conveying ideas, skills, or attitudes through reading educational media materials
   9. selecting educational media materials
   10. explaining textbooks as contributions to teaching and learning
   11. improving performance in using and evaluating textbooks, reference books, microforms, and programmed instruction

G. Listening to Educational Media Materials
   1. application of S-R Associationism theories to the listening of educational media materials
   2. application of Gestalt-Field theories to the listening of educational media materials
   3. application of Operant Conditioning to the listening of educational media materials
   4. application of Cognitive-Field theories to the listening of educational media materials
   5. identifying, selecting, and evaluating various educational media materials in the listening area
   6. applying methods of instruction to listening materials
   7. identifying learning objectives to be realized in the listening field
   8. importance of educational radio broadcasting
   9. identifying reference materials in the listening area
   10. planning learning experiences to reinforce practices of accepted learning theories
   11. role and potential of listening to educational media materials to achieve curriculum goals
   12. designing learning situations in which recordings can be used

II. Viewing Educational Media Materials
1. application of S-R Associationism theories to the viewing of educational media materials
2. application of Gestalt-Field theories to the viewing of educational media materials
3. application of Operant Conditioning to the viewing of educational media materials
4. application of Cognitive-Field theories to the viewing of educational media materials
5. identifying, selecting, and evaluating educational media materials in the viewing areas
6. utilization of presenting graphic materials affectively to attain learning objectives
7. utilization of still pictures to improve visual literacy
8. improving learning that involves motion pictures
9. indicating methods by which television can be incorporated as a part of classroom or library instruction
10. planning possible uses of television programming
11. providing experiences with visual media materials and their role in education

IV. Teaching Methods

Class lectures, discussions, field trips, and individual reports and projects. Application of learning theory to the use of reading, listening, and viewing educational media materials. Use of mediated instructional resources.

V. Bibliography (see attached)

Text:

A. Bigge, Morris L. Learning Theories for Teachers. New York: Harper & Row, 1964.

B. Brown, James W. and others. AV Instruction; Technology, Media, and Methods. Fifth Edition. New York: McGraw-Hill, 1977.

VI. Basic Requirements of the Course

A. Reference and Textbook Reading
B. Participation in Class Discussion
C. Completion of Individual Projects
D. Participation in Panel Discussion
E. Completion of Annotations of Media Materials

VII. Procedures for Evaluation of Course

A. The success of the course in meeting its objectives will be determined by quizzes and exams of student competency in the Application of Learning Theory to Reading, Listening, and Viewing Educational Media Materials.

B. Skill growth indication will be measured by evaluation form.

C. Students will be given the opportunity to evaluate the course and instructor.

COURSE BIBLIOGRAPHY

Ball, John and Francis C. Byrnes, ed. Research, Principles, and Practices in Visual Communication. Washington, DC: AECT, 1960.

Bigge, Morris L. Learning Theories for Teachers. New York: Harper and Row, 1964.

Bloom, Benjamin S. and others. Handbook on Formative and Summative Evaluation of Student Learning. New York: McGraw-Hill, 1971.

Brown, James W. and others. AV Instruction; Technology, Media, and Methods. Fifth Edition. New York: McGraw-Hill, 1977.

Bugelski, B. R. The Psychology of Learning Applied to Teaching. Second Edition. New York: Bobbs-Merrill, 1971.

Craig, Robert C. The Psychology of Learning in the Classroom. New York: Macmillan, 1966.

Dale, Edgar. Audiovisual Methods In Teaching. Third Edition. New York: Holt, Rinehart, and Winston, 1969.

Erickson, Carlton W. Fundamentals of Teaching with Audio Visual Technology. Second Edition. New York: Macmillan, 1972.

Gattegno, Caleb. Towards a Visual Culture: Educating Through Television. New York: Avon, 1969.

Gerlach, Vernon S. and Donald P. Ely. Teaching and Media. Englewood Cliffs, New Jersey: Prentice-Hall, 1971.

Gibson, James J. The Perception of the Visual World. Boston: Houghton-Mifflin, 1950.

Helgard, Ernest R. and Gordon H. Bower. Theories of Learning. Third Edition. New York: Appleton-Century-Crofts, 1966.

Hulse, Steward H. The Psychology of Learning. Fourth Edition. New York: McGraw-Hill, 1975.

Mager, Robert F. Developing Attitude Toward Learning. Belmont, California: Fearon, 1968.

Platt, Joan M. Visual Literacy. Washington, DC: National Education Association, 1975.

Skinner, B. F. The Technology of Teaching. New York: Appleton-Century-Crofts, 1968.

Williams, Catherine. Learning From Pictures. Washington, DC: National Education Association, 1968.

Wittich, Walter and Charles Schuller. Audiovisual Materials; Their Nature and Their Use. Fifth Edition. New York: Harper and Pow, 1973.

IV. Discussion, Implications, and Recommendations

With the development of this course in Learning Theory as it applies to reading, listening, and viewing educational media materials, the Department of Media Communication Science will be prepared to initiate a program that will lead to a graduate level program offering a Master of Education Degree with Specialization in Educational Media. Trenton State College will be the only institution of higher learning in the State of New Jersey to offer such a course which specifically meets the requirements of the new State Certification laws. This course has been recommended to be accepted as a Graduate course in the School of Education and will be taught beginning with the next semester by a senior faculty member.

Apparently other institutions not offering such a course are not fulfilling the degree requirements for State Certification and do not understand the value of a learning theory course taught in this matter. Therefore recommendations will be made to other institutions, library schools or media departments as well as the State Board of Examiners to include this important element that is missing in their curriculum. A graduate curciculum in Media/Library Science can only be effective with the proper requriement in learning theory and should be considered as being a core course in all library schools.

Research during the study also makes a strong point as to no one medium is best for all purposes or no one learning theory

and that media uses should be consistent with its objectives. Media must be appropriate for the instructional and must fit student capabilities and learning styles. Finally, the study has shown the importance of planning and guiding the integration of appropriate media to support different types of learning experiences.

APPENDIX I

TRENTON STATE COLLEGE
Department of Media Communication Science

The following new certification programs were passed by the State Board of Education on May 8, 1975.

6:11-12.21 Educational Media Specialist

(a) AUTHORIZATION. This certificate is required for any person who is assigned to develop and coordinate educational media services in the public schools. Educational media are defined as all print and non-print resources and the equipment needed for their use.

(b) REQUIREMENTS:

1. A master's degree from an accredited institution.

2. A standard New Jersey teacher's certificate or Associate Educational Media Specialist certificate.

3. One year of successful teaching or one year of experience as an Associate Educational Media Specialist.

4. Successful completion of one of the following:

i. A graduate curriculum approved by the New Jersey State Department of Education as the basis for issuing this certificate.

OR

ii. A minimum of thirty (30) semester-hour credits of post-baccalaureate studies. Courses completed in the candidates graduate degree program may be applied toward fulfilling these requirements. The following areas of study must be included in either separate or integrated courses:

(1) Organization and coordination of school media services and materials.

(2) Application of learning theory in reading, listening, and viewing educational media materials.

(3) Design and development of educational media programs.

(4) Design and development of educational media materials.

(5) Integration of educational media through the school curriculum.

(6) Evaluation, selection, and utilization of education media.

(7) Development of individual and group processes in the media program.

(8) Field experience in a school media program.

(c) STANDARDS FOR APPROVAL OF GRADUATE TEACHER EDUCATION PROGRAMS IN EDUCATIONAL MEDIA. The following standards pertain to programs preparing persons to develop and coordinate educational media services in the public schools. These individuals are concerned with the improvement of the learning process and instruction through the evaluation, selection, organization, distribution, production, and utilization of appropriate print and non-print resources and the equipment needed for their use. The educational media specialist provides direction to educational activities in areas related to and within the educational media services program.

1. STANDARD I - The program shall provide growth opportunities to assure that candidates acquire a broad cultural and intellectual background.

2. STANDARD II - The program shall provide for learning experiences in:

   i. Analysis of the nature and content of instructional materials.

ii. Methods of selecting and evaluating materials through the study of individual media as well as through cross media study by curriculum unit or grade level.

iii. Methods of utilization of materials to support curriculum and meet student needs.

iv. Methods of production of appropriate educational media including actual laboratory experience.

v. Processes for the organization and maintenance of materials and equipment.

vi. Identification of learning strategies of pupils.

vii. Evaluation of the learner's instructional media requirements.

viii. Design and development of educational media programs.

ix. Design and development of educational media resources.

x. Development of individual and group processes in the media program.

3. STANDARD III - The program shall assure increased comprehension of the principles of curriculum, and the application of instructional media techniques to the curriculum.

4. STANDARD IV - The program shall require field experience in a school media center. Prior field experience in educational media may be accepted in lieu of this requirement.

5. STANDARD V - The program shall provide experiences and understanding of expanded services, such as extending the use of the media center, television, microforms, and other forms of technology, as may become appropriate for school media use.

BIBLIOGRAPHY

1. Ausburn, Floyd B. and Lynna J. Learning Tasks Requirements, Cognitive Styles and Media Attributes: An Interactive Research Model. U. S., Educational Resources Information Center, ERIC Document ED 118 157, March, 1976.

2. Borgers, Sherry B. and Robert G. Ward. Communication: Listening and Responding: Affective 4.0. U. S. Educational Resources Information Center, ERIC Document ED 100 938, no date.

3. Day, W. F. and B. R. Beach. A Survey of the Research Literature Comparing Visual and Auditory Presentation of Information. Wright Patterson Air Force Base, Air National Command: U. S. Air Force Technical Report, Number 5921, 1950.

4. Gropper, G. L. "The Design of Stimulus Materials in Response Oriented Programs," AV Communication Review, 18, 2, 129-159.

5. Hattman, John William. An Upward Bound Communication Curriculum: Description and Evaluation. The Romantic Mode in the Core Curriculum. U. S., Educational Resources Information Center, ERIC Document ED 102 550, 1974.

6. Henz, M. "Effect of Response Mode on Learning Efficiency," AV Communication Review, 17, 1, 77-83.

7. Keyes, Barbara J. and others. The Development of Listener Competence. U. S., Educational Resources Information Center, ERIC Document ED 115 359, April, 1975.

8. Kranyik, Margery A. Teaching to Listen and Listening to Teach. U. S., Educational Resources Information Center, ERIC Document ED 108 256, April, 1975.

9. Lynn, Elizabeth Meagher. A National Survey of Graduate Courses in Classroom Communication Theory and Skills Available to Practicing Elementary and Secondary Teachers. U. S., Educational Resources Information Center, ERIC Document ED 103 930, 1974.

10. Rogers, Donald P. The Undergraduate Course in Organizational Communication: Rationale, Objectives, and Strategies. U. S., Educational Resources Information Center, ERIC Document ED 109 728, April, 1975.

11. Spangenberg, Ronald W. Selecting Methods and Media to Achieve Training Objectives: A Preliminary Manual. U. S., Educational Resources Information Center, ERIC Document ED 121 263, February, 1971.

12. Visual Concepts Program: An Evaluation Report. U. S., Educational Resources Information Center, ERIC Document ED 239 872, 1973.

13. Vitro, Frank and Robert J. Drummond. Principles of Learning and Instruction: Classroom Application for Teachers. U. S., Educational Resources Information Center, ERIC Document ED 117 308, 1975.